

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number
WO 2005/074569 A2

(51) International Patent Classification: Not classified

(21) International Application Number:
PCT/US2005/002872

(22) International Filing Date: 13 January 2005 (13.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/540,361 30 January 2004 (30.01.2004) US

(71) Applicant (for all designated States except US): **THE REGENTS OF THE UNIVERSITY OF CALIFORNIA** [US/US]; 1111 Franklin Street, 12FL, Oakland, CA 94607-5700 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MERRIMAN, Barry** [US/US]; Los Angeles, CA (US). **CHEN, Zugen** [US/US]; Los Angeles, CA (US). **KIM, Chang-Jin** [US/US]; California (US). **NELSON, Stanley** [US/US]; California (US). **TSAL, Jane, Gin-Fai** [US/US]; California (US).

(74) Agents: **GREENBERG TRAURIG, LLP** et al.; Suite 400 E, 2450 Colorado Avenue, Santa Monica, CA 90404 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

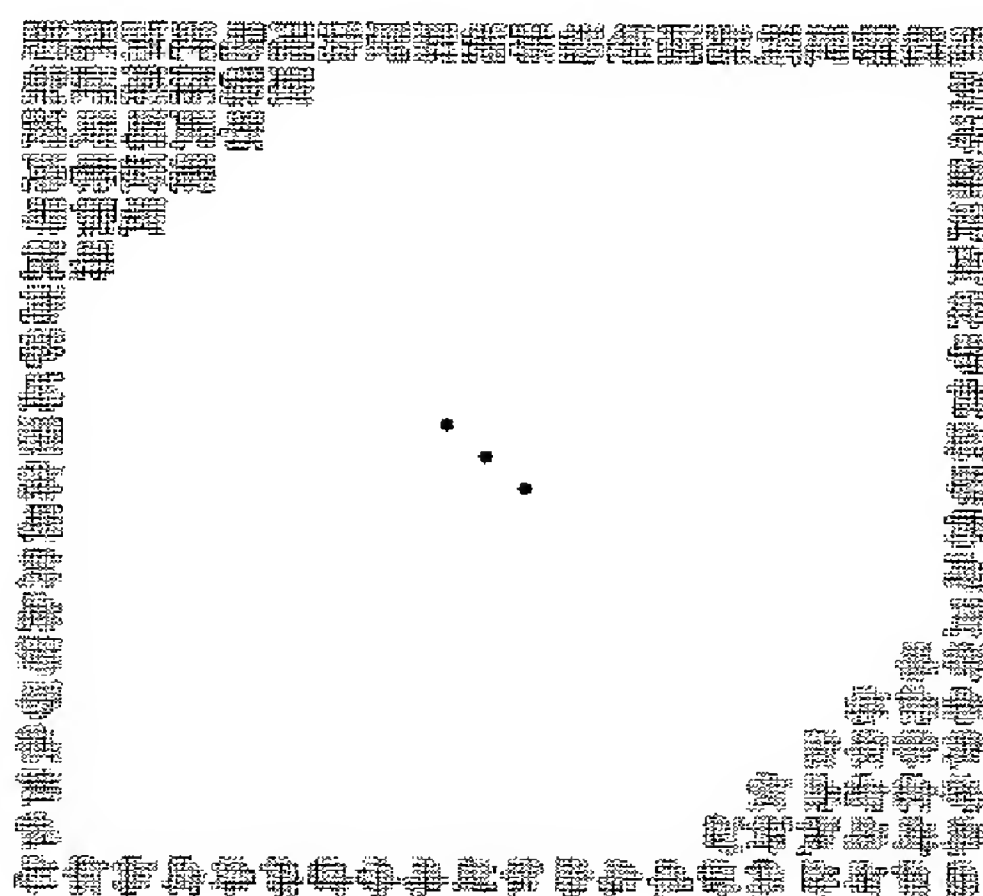
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: TRACERS AND ASSEMBLY FOR LABELING CHEMICAL OR BIOLOGICAL MOLECULES METHODS AND KITS USING THE SAME



(57) Abstract: An improved process to create an arbitrarily large number of distinguishable particles allows more flexibility in experimental design and related efficiencies of scale. Novel enhanced tracers, for example, Shape Encoded Particles (SEP's) function as indicator means, such as probe-carriers in massively multiplexed assays. Shape encoded identity provides an elegantly simple tracking mechanism, whereby binding/reaction probes coupled to SEP's surfaces can be monitored, viewed, imaged or otherwise utilized leveraging off of the generation of millions of distinct, for example, approximately 100x100x10 micron squared silicon flakes fabricated using conventional MEMS techniques. Plethoric related applications, and contemplated strategies for benefiting from the novel enhanced SEP's and their respective enabling technologies are disclosed, ranging from pearl culturing seed elements to uniquely identify resulting jewelry pieces to an improved parallel stem cell differentiation screening assay.

WO 2005/074569 A2

WO 2005/074569 A2



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.